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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,321	06/14/2006	Victor Petrovich Ostanin	000131-00020	8990

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EXAMINER	
KINKEAD, ARNOLD M	
ART UNIT	PAPER NUMBER
2817	
MAIL DATE	DELIVERY MODE
10/17/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/553,321	OSTANIN ET AL.	
	Examiner	Art Unit	
	Arnold Kinkead	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06-19-08*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,10,11,14,17 and 18* is/are rejected.

7)☒ Claim(s) *3-9,12,13,15,16,19 and 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The earlier filed priority document does not support the phase shift concept and thus the use of the Adkins et al reference still valid.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim s 2,10,11,14,17,18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petrovich et al(US 6,972,553 of record) and further in view of Adkins et al(US 6,820,469 of record.)

The reference by Petrovich et al discloses a sensor circuit(for analytes) using a flexure plate wave type resonator(sensor); see abstract figure. The use of a variable frequency generator is shown(64) to generate a driving signal to the resonator plate via coupler(74). An analyzer(62) is shown for monitoring the phase shift and ultimately adjust the phase delay element to maintain the resonant frequency. The frequency synthesizer of Petrovich et al shows the variable frequency generator(64). A reference signal (input, 98) is shown. The adjustment signal being input to the vco(64).

The reference by Petrovich et al does not highlight the characteristic voltage and current parameters of the plate during the adjustment, however, the reference by Petrovich et al has a general plate sensor whereas, the Adjkins et al reference is relied on to show use of an equivalent piezo resonator type, please see col. 3, lines 57-65,

"The paddle 13 is preferably a non-magnetic, semiconducting or insulating thin plate, which typically can be Silicon, Polysilicon, Silicon Nitride, Silicon Dioxide, or a polymer. Alternatively, other thin-film materials can be used. Alternatively, the paddle 13 can be a conducting material with a thin insulating film(not shown)..."

The reference by Adkins et al discloses an apparatus for oscillating a surface where analytes are absorbed(see abstract) and figures 1,2,3, where the resonator is controlled and as noted below: Please see col. 10, lines 35-45,

"…An alternative approach to determining the resonat frequency OMEGA.sub.n. is to track the phase difference between the drive voltage and drive current. If the resonator 10 is operated at a constant frequency near resonance by a frequency-controlled circuit, then minor changes in mass on the paddle 13 will cause a shift in the phase difference between the drive voltage and the drive current,…"

In light of the above it would have been obvious to one of ordinary skill in the art to have recognized that the general resonator of Petrovich et al could be a piezo type equivalent used for sensing as shown in Adkins et al and that the V and I parameters are inherent as highlighted in Adkins et al during the driving signal application across the resonator surface for use in adjusting the phase shift.

Allowable Subject Matter

Claims 3-9,12,13,15,16,19,20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed 06-19-08 have been fully considered but they are not persuasive. The examiner has looked at the priority dates and the earlier filed

application, PCTGB2004 001615, however, this priority document does not support the current application with regards the phase shift concept… The Adkins et al reference supports V and I parameters for use in adjusting phase shift…

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnold Kinkead whose telephone number is 571-272-1763. The examiner can normally be reached on Mon-Thurs:8:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on 571-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Arnold Kinkead/
Primary Examiner, Art Unit 2817